

**Minutes of the Stakeholders Advisory Committee Meeting**  
**Research Triangle Park (RTP), NC**  
**September 20, 2005**

The fifteenth meeting of the Stakeholders Advisory Committee (SAC) was held to discuss the status and direction of the Air Pollution Control Technology (APCT) Center of the U.S. Environmental Protection Agency's (EPA) Environmental Technology Verification (ETV) program. This program is being conducted through a cooperative agreement between EPA and RTI International<sup>1</sup>. Mr. Drew Trenholm, RTI Director for the APCT Center, chaired the meeting. The agenda (Attachment A) and a list of attendees (Attachment B) are appended.

<sup>1</sup> *RTI International is a trade name of Research Triangle Institute.*

**Introduction**

Mr. Trenholm called the meeting to order at 8:40 am, reviewed the agenda, and made several announcements about the conduct of the meeting. All attendees introduced themselves.

**ETV Program Update**

Mr. Michael Kosusko, US EPA/APPCD and APCT Project Officer, reviewed the status of the overall ETV program. The slides he used with his presentation are available as Attachment C. Only 2 ETV centers are currently funded through ETV following the most recent reorganization of the program; they are the APCT Center and the Advanced Monitoring Systems Center. Three centers are unfunded: Drinking Water Systems Center, Greenhouse Gas Technology Center, and Water Quality Protection Center. The status of the P2 Coatings and Coatings Equipment Pilot remains undecided.

Mr. Kosusko also discussed the new Environmental Science and Technology Evaluations (ESTE) Program. Unlike ETV technology areas, which are driven by stakeholders, primarily benefit the vendors, and run under cooperative agreements, ESTE is looking at high-risk technologies driven by agency needs, primarily to benefit the government, and run under government contracts. ESTE evaluations will include life-cycle analysis to look at those with the least environmental impact, and from a sustainability perspective to minimize waste streams.

Of 12 proposed ESTEs, five received funding, one was withdrawn, and six were not funded. Mr. Kosusko said that funding is likely to be in place by April 2006 (mid-fiscal year) and testing complete by December 2006.

Mr. Kosusko also discussed the Region 5 School Bus Retrofit Programs and Effect on Reducing Exposure in Drivers. Mr. Praveen Amar, NESCAUM, asked about exposure studies in children. Drivers are used because their exposures are typically longer, and thus pose more of a worst-case scenario.

**APCT Center Update**

Mr. Trenholm reviewed the events that occurred since the last SAC meeting held on March 31, 2005. The materials he used with his presentation are available as Attachment D. Mr. Trenholm included progress on verifications, outreach activities, and contact with potential partners. One potential partner is New York State Energy Research and Development Authority's (NYSERDA), who has interest in verification of a biofilter. NYSERDA typically tries to keep their grant money within their own state; however, the APCT Center could benefit if a New York

company sought verification and paid for it with NYSERDA funds. The research site is in Syracuse, and the host field site is nearby.

Mr. Robert Bessette, Council of Industrial Boiler Owners, asked about whether a test plan had been developed. Test plans are technology specific, but the Center has developed a *Generic Verification Protocol for Bioreaction System Control Technologies For Volatile Organic Compound Emissions* in October 2003, and was close to verifying a system, but the company was forced to withdraw for business reasons. Mr. Bessette requested that the SAC have an opportunity to review the test plan. Depending on the project schedule, the test plan may be included on the agenda at the next SAC meeting in March 2006.

Mr. Bill O'Sullivan, New Jersey Department of Environmental Protection (representing STAPPA/ALAPCO), said that people building boats in barns using sprays with styrene poses environmental problems for the state, and finding a solution such as a biofilter would be very helpful.

### **Dust Suppression**

Ms. Debbie Franke, RTI, presented an overview of the activities on Dust Suppression. The materials she used with her presentation are available as Attachment E. Reports for the five dust suppressant verifications will be posted as soon as EPA's administrative review is completed and the reports are signed off by the director of the National Risk Management Research Laboratory. Completed verification reports and verification statements are usually posted to RTI's APCT Center website <http://etv.rti.org/apct/> within 1-2 days of approval, and are usually posted on EPA's ETV website within a month. A general announcement is sent to all members of our database when new verifications are posted to the APCT Center website. New verifications posted to the EPA ETV website are usually announced in the ETVoice email newsletter distributed to subscribers.

Mr. Amar asked for clarification of the EC<sub>50</sub>, the effective concentration which affects 50% of the sample population, and wanted to know what toxicity effects the parameter included and what the threshold value was. Ms. Franke offered to get back to him with the details.

### **Mobile Diesel Retrofit Program**

Ms. Jenni Elion, RTI, presented an update on verification of Mobile Sources. The materials she used with her presentation are available as Attachment F. Ms. Elion pointed out that ETV, as an EPA Office of Research and Development (ORD) program, is independent of the Voluntary Diesel Retrofit Program run by EPA Office of Transportation and Air Quality (OTAQ), but data obtained through ETV may be submitted to OTAQ and to California Air Resources Board. OTAQ and CARB have different requirements, so it is important for applicants to include both agencies in the planning stages so that the resulting verification data will satisfy both agencies.

The test plan is set up to calculate the number of replicate tests needed based on the manufacturer's claimed reductions. The higher the claimed reductions, the fewer replicates are needed to determine a statistically significant reduction with the required confidence limits. In the case of a recent technology tested, the manufacturer claimed in excess of 50% reduction. However, the confidence interval of the results included zero. Mr. Trenholm suggested the variation was due to the engine itself, not the technology. Mr. Bessette recommended assuming zero reduction for questionable technologies and plan the testing accordingly, despite the higher costs.

Mr. Bessette asked if data indicated whether synthetic oils give better gas mileage. Currently, no products have been tested under the applicable fuels protocol, but fuel economy is measured and reported. Ms. Elion noted that upgrading the fuel economy measurements to a data quality objective may be incorporated into protocol revisions. Generally, emission reductions from such products are expected to be minimal, but the cumulative effect when applied across a fleet accumulating hundreds of thousands of miles, can be substantial in terms of actual emissions reduced, and for fuel economy, money saved. Mr. Trenholm noted that the Greenhouse Gas Center focuses on the energy-related performance of such technologies.

### **Indoor Air Products**

Ms. Debbie Franke, RTI, presented an overview of the activities on indoor air products. A draft test plan was recently submitted to EPA for review. The materials she used with her presentation are available as Attachment G.

### **Baghouse Filtration Products**

Mr. Trenholm presented an update on verification of baghouse filtration products (BFP). The materials he used with his presentation are available as Attachment H. Points made during the discussion are that ceramic or other solid filters can be handled with the current protocol, and vendors interested in verifying new fabrics are encouraged to pre-screen their materials before verification.

Mr. Terry McKenna, Filtext, asked if there were any tests to detect flue gas (e.g., SO<sub>3</sub>) chemical interactions with the fabrics. Southern Research Institute and ETS are both looking at how the fabric deteriorates. Mr. Trenholm said the APCT Center had no plans in this area but has considered bag coatings such as activated carbon. Mr. Trenholm was also interested in test data that could compare efficiency of the fabric in the field with how it worked in the lab test.

### **Fine PM -- current Center activities**

Mr. Trenholm reviewed how fine PM control technologies are currently verified in the APCT Center in the areas of baghouse products, dust suppressants, mobile sources, and indoor air. The overheads he used with his presentation are available as Attachment I.

### **Debriefing of fine PM meeting, September 19**

Mr. Trenholm reviewed the discussions of the previous day's meeting focusing on fine PM. There is currently limited performance data on how well technologies control fine PM and condensibles, especially from stationary emission sources. Mr. Dennis Johnson, EPA Office of Transportation and Air Quality, noted that many studies are indicating that more than 95% of PM from mobile sources is less than 2.5 microns in diameter. Comments were that this may be true for multiple sources (e.g., cooling towers, residential showers, tire dust, restaurant cooking operations). Although considerable stationary source emission data are obtained for permitting purposes, PM<sub>2.5</sub> measurements are typically omitted. Strategies for addressing this data gap were discussed, including the possibility of exploring the addition of planning ETV-acceptable PM<sub>2.5</sub> data as part of routinely planned sampling operations (including inlet and outlet measurements) where the incremental cost may be low.

### **Discussion of Fine PM and Future Direction for APCT Center**

Fine PM control technologies may be of interest for commercial restaurants, diesel engine retrofits, and construction. Industry sectors where technologies are needed should be identified at a local or regional level. Mr. Trenholm then asked committee members to discuss possible APCT extension within the context of air pollution control of fine PM. One suggestion was to focus on small emissions sources. For example, the APCT Center could explore the addition of small-

boiler control verification; incremental emission improvements in this population has the potential of a large cumulative impact. The operators would gain efficiency improvements involving computer changes, while lowering the environmental impact - such a program could be communicated via trade groups.

**Conclusion**

The next SAC meeting is scheduled for Tuesday, March 21, 2006, in Research Triangle Park, NC.

Mr. Trenholm thanked everyone for their participation and adjourned the meeting at 2:30 p.m.

Respectfully submitted,  
*Jenni M. Elion*  
Research Triangle Institute

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**Attachment A: AGENDA**  
**Air Pollution Control Technologies Center**  
**Environmental Technology Verification Program**  
**Stakeholders Advisory Committee (15th meeting)**  
**Main Building EPA Campus - Room C113**  
**Research Triangle Park, NC**  
**September 20, 2005**

- 8:30 a.m. Welcome/Introduction  
*Drew Trenholm, APCT Center Director, RTI International*  
*Michael Kosusko, APCT Center Project Officer, US EPA/APPCD*
- 8:50 a.m. Status/Update: ETV Program  
*Michael Kosusko, US EPA/APPCD*
- 9:15 a.m. Status/Update: APCT Center  
*Drew Trenholm, RTI International*
- 9:30 a.m. Status/Update: Dust Suppression  
*Debbie Franke, RTI International*
- 9:50 a.m. BREAK
- 10:10 a.m. Status/Update: Mobile Sources (Diesel Engines)  
*Jenni Elion, RTI International*
- 10:55 a.m. Status/Update: Indoor Air Products  
*Debbie Franke, RTI International*
- 11:15 a.m. Status/Update: Baghouse Filtration Products  
*Drew Trenholm, RTI International*
- 11:45 a.m. LUNCH
- 12:45 p.m. Fine PM - current Center activities  
*Drew Trenholm, RTI International*
- 12:45 p.m. Debriefing of fine PM meeting, September 19  
*Drew Trenholm, RTI International*
- 12:45 p.m. Fine PM - Center directions  
*SAC discussion*
- 2:15 p.m. Summary/Wrap-Up/Next Meeting  
*Drew Trenholm, RTI International*
- 2:30 p.m. Adjourn
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## **Attachment B: List of Attendees**

### ***APCT ETV Program***

Michael Kosusko\* US EPA/APPCD  
Drew Trenholm\* RTI International

### ***Stakeholder Advisory Committee Members Present***

Praveen Amar NESCAUM  
Robert Bessette Council of Industrial Boiler Owners  
Shawn Daley California Air Resources Board  
Vic Engleman Engleman Associates (*representing AWMA*)  
Dennis Johnson EPA/OTAQ  
*for Jim Blubaugh*  
David McNeal EPA (Region 4)  
Bill O'Sullivan Regional Air Pollution Control Agency (STAPPA/ALAPCO)  
*for John Paul*  
Gene Praschan Consultant (*representing ASTM*)

### ***Other Attendees***

Jenni Elion\* RTI International  
Randy Evans Infineum USA LP  
Debbie Franke\* RTI International  
Stacy Haggis Southern Research Institute  
David Johnson E3 Ventures  
Blair Martin US EPA/APPCD  
John McKenna ETS  
Terry McKenna Filtex  
Minh Pham South Coast Air Quality Management District  
Gene Tatsch RTI International

### ***Stakeholder Advisory Committee Members Absent***

Linda Benevides Commonwealth of Massachusetts  
Michael Bevan Advent International  
John Bosch EPA/EMAD  
Rick Colyer EPA/ESD  
Ted Cromwell American Chemistry Council  
David Foerter Institute of Clean Air Companies  
Dawn Friest Engine Manufacturers Association  
Thomas Logan EPA/EMAD  
Robert McIlvaine McIlvaine Company  
Dale McKinnon Manufacturers of Emissions Controls Association

Brock Nicholson    NC Dept. of the Environment and Natural Resources  
John Pinkerton    National Council of Air & Stream Improvement  
Richard Van Frank    National Audubon Society

*\*Indicates presenter*